REMARKS/ARGUMENTS

Claims 26-32 and 34-58 remain pending in the instant application. No claims are amended or canceled by this response.

Embodiments in accordance with the present invention relate to methods and computer programs for managing probe array experiments. In particular, each of the pending independent claims describes receiving results of a probe array experiment over a computer network:

> 26. A method for a user interface to accept laboratory experiment information for control of a laboratory experiment, the method using a computer system, the computer system including a processing system coupled to a network, wherein a user input device, display device and processor are coupled to the processing system, the method comprising
>
> accepting signals from the user input device to define a parameter of a probe array experiment;
>
> transferring the parameter to the network;
>
> receiving experiment results from the network, wherein the experiment results include results from the probe array experiment using the parameter; and
>
> displaying the experiment results on the display device. (Emphasis added)

> 32. A method for displaying laboratory experiment information, the method using a computer system, the computer system including a processing system coupled to a network, wherein a display device and processor are coupled to the processing system, the method comprising
>
> using the processor to display steps of setup and execution of a probe array experiment over the network; and
>
> using the processor to display a result from the network for a sample for one or more of the displayed steps.

> 34. A computer program embodied on a computer-readable medium for a method to accept laboratory experiment information, the method using a computer system, the computer system including a processing system coupled to a network, wherein a user input device, display device and processor are coupled to the processing system, the computer program including
>
> one or more instructions for accepting signals from the user input device to define a parameter of a probe array experiment;
>
> one or more instructions for transferring the parameter to the network;
>
> one or more instructions for receiving experiment results from the network, wherein the experiment results include results from the probe array experiment using the parameter; and
>
> displaying the experiment results on the display device.

In the latest office action, the Examiner rejected these claims as obvious under 35 U.S.C. §103, based upon U.S. patent no. 5,968,731 to Layne et al. ("the Layne patent") in combination with a host of other references. These claim rejections are overcome as follows.

The Layne patent relates to automated testing of infectious biological specimens. Specifically, the Layne patent describes only a testing apparatus comprising a conventional 96-well microtiter plate (212), in conjunction with robotic fluid handling apparatuses. (See Fig. 7 below, and col. 11, line 49 - col. 13, line 12).

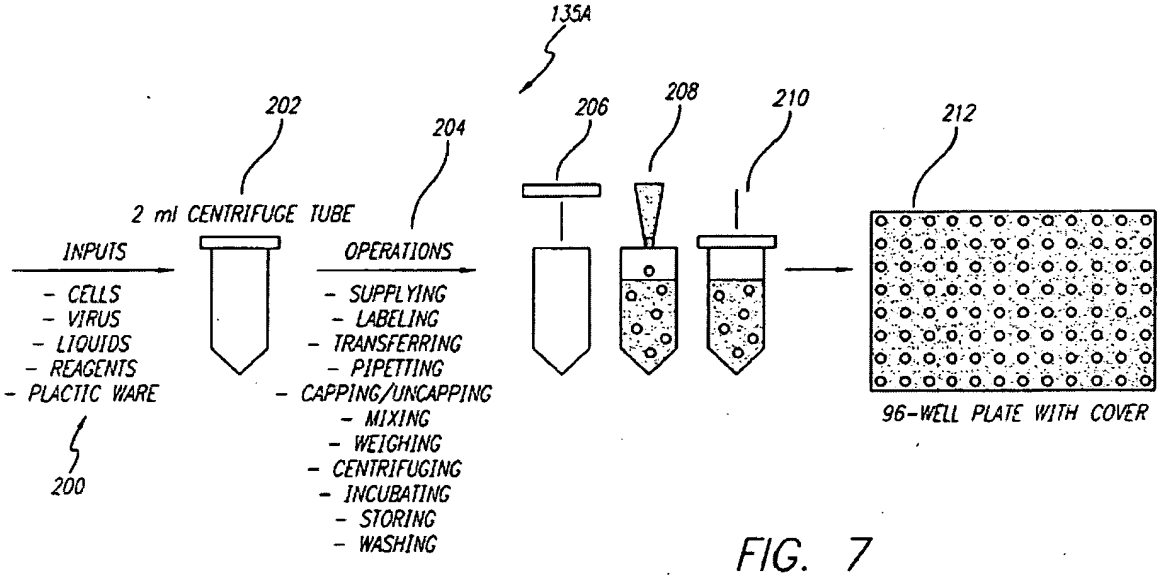

FIG. 7

The Layne patent fails to include any teaching, or even suggestion, regarding communication of results from a probe array experiment over a computer network.

In an effort to provide such a teaching, the Examiner has resorted to combining the Layne patent with a number of other patents describing probe array techniques, including U.S. patent no. 6,100,030 to McCasky Feazel et al. ("the McCaskey Feazel patent"), U.S. patent no. 5,968,731 to Dehlinger et al. ("the Dehlinger patent"), U.S. patent no. 6,046,165 to Laughton et al. ("the Laughton patent"), and U.S. patent no. and 6,046,165 to Lipshutz et al. ("the Lipshutz patent"). None of these patents, however, describe communicating results from a probe array experiment over a computer network.

In the previous office action, the Examiner relied upon the combination of the Layne and McCaskey Feazel patents to reject the claims. In response, Applicants argued these patents

lacked any motivation for their combination, and that this lack of motivation revealed the Examiner's hindsight in providing such motivation.

Now, in the latest office action, the Examiner has argued that no hindsight was exercised to combine the Layne and McCaskey Feazel patents because:

> the combination would have provided a method for allowing access to biological samples in areas where access to laboratory materials and procedure is limited, as well as to provide means for linking the process to additional information and/or additional users to all more thorough analysis by sharing samples . . . . (Citations omitted; Office Action mailed January 14, 2005, page 15, line 19 - page 16, line 2).

Applicants do not dispute that the Layne patent teaches providing experimental results over a network. Applicants do dispute that other patent references cited by the Examiner contain any suggestion to provide experimental results from probe array experiments over a network.

Specifically, as noted in the previous response, the McCasky Feazel patent describes experimental results from high density arrays featuring on the order of at least thousands of different probes[1]. The Lipshutz patent references the same high density probe array technology discussed in the McCasky Feazel patent.

Similarly, the Dehlinger patent describes experiments involving large arrays of probes:

> A "high-density array" of oligonucleotides, probes, or gene fragments (regions) refers to a linear array of at least 100 regions/cm, or to a planar array of at least 1,000 regions/cm^2. (Emphasis added; col. 5, lines 31-34)

The Laughton patent also describes experimental results involving many thousands of different probes:

> In a preferred embodiment, the combined use of photolithography and oligonucleotide chemistry is used to synthesize an array of as many as 400,000 different oligos on a 1.6 cm^2 glass slide. (Emphasis added; col. 32, lines 40-43)

Thus, while experiments of the Layne patent would be expected to produce data from at most about 100 probes (from the conventional 96 well microtiter plate), experiments from the McCasky Feazel, Dehlinger, Lipshutz, and Laughton patents relied upon by the Examiner would

[1] The McCasky Feazel patent specifically mentions the high density probe array technology pioneered by Affymetrix, assignee of the instant application. (See col. 23, lines 59-64)

be expected to produce data from probes numbering in the thousands, or even hundreds of thousands. This would require transmission of data over a computer network in volumes at least ten times larger than described in the Layne patent. Given the sheer magnitude of the increased volumes of data produced by the probe array experiments, it is not surprising that the above patents relied upon by the Examiner fail to teach, or even suggest, communicating results from experimental probe arrays over a network.

Owing to the failure of either the McCasky Feazel, Dehlinger, Lipshutz, or Laughton patents to suggest their combination with the Layne patent to provide probe array experimental results over a computer network, it is respectfully asserted that the pending claims cannot be considered obvious in light of those references. The instant claim rejections are improper and should be withdrawn.

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

Kent J. Tobin
Reg. No. 39,496

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400;
Fax: 415-576-0300
KJT:ejt
60430494 v1